



**LUCINTEL INSIGHT
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FIVE TRENDS SHAPING THE FUTURE OF THE MICROSPHERE MARKET

The microsphere market is growing and gaining traction due to the growing pharmaceutical and medical industries, along with the increasing need for advanced drug delivery systems. The rising wave of the use of biodegradable, ceramic, polymer, and fluorescent microspheres is creating significant potential in various paint and coating, composites, medical technology, life science and biotechnology, cosmetic and personal care, and other industries. The major growth

drivers for this market are the growing demand for higher efficiency and lightweight materials, and the superior structural and enhanced properties of microspheres over those of conventional fillers.

The microsphere market is divided into several segments, such as hollow microspheres and solid microspheres. Key players in the microsphere market include 3M, Cospheric, Trelleborg, and AkzoNobel Expancel. These have been working on different strategies to drive sales using highly influential marketing approaches; however, as we examine the challenges and opportunities ahead in this market, companies can benefit from a strategy of developing biodegradable microspheres and controlled drug delivery system microspheres along with the key target market trends we have identified. Lucintel predicts the global microsphere market will be valued at \$4.2 billion by 2025, with an expected CAGR of approx. 5.0% between 2020 and 2025.

Lucintel identifies five trends set to influence the global microsphere market. Most of the industry players and experts agree that these five trends will accelerate developments in the microsphere industry in the near future. In terms of the widespread knowledge about the microsphere market already on the horizon, there is still a lack of unified perspective on the direction the industry is moving to proactively address developments. To help bring more clarity to this gap, our study aims to provide insights concerning the direction that changes are taking and how these changes will impact the microsphere market.

1. Biodegradable Microspheres

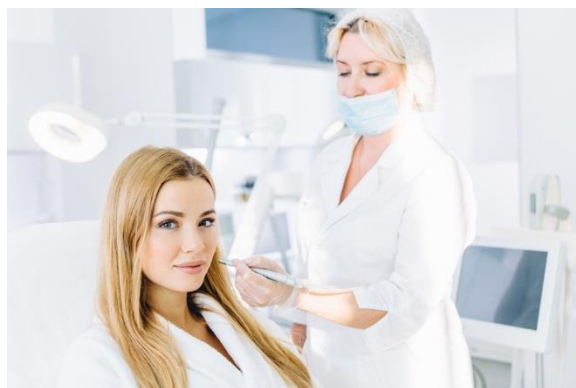
Biodegradable microspheres are increasingly used in radio-embolization for the treatment of advanced cancerous tumors. Biodegradable microspheres are environmentally safe and possess all the performance characteristics that are required by end



product manufacturers. Biodegradable injectable microspheres have been studied widely and their application is growing, specifically in the medical and cosmetic industries. Biodegradable microspheres can significantly prolong the duration of a drug effect, reduce the frequency of administration, and therewith improve patient compliance. Poly(lactic-co-glycolic acid) (PLGA) is one of the more widely used biodegradable polymers, and it has been used in several FDA-approved parenteral microspheres currently on the market, for example, Lupron Depot for prostate cancer, Vivitrol for alcohol and opioid dependence, and Risperdal Consta for schizophrenia.

2. Growing Demand for Polymer Microspheres

Polymer microspheres have a wide range of applications in the medical sector. The use of polymer microspheres in drug delivery systems is gaining tremendous traction due to their potential to encapsulate a range of drugs, as well as their biocompatibility and high bioavailability. They also have the ability to support disease diagnosis. The popularity of polymer microspheres has increased because synthetic microspheres can be easily manufactured with well-defined physical parameters and within desired size ranges.



3. Increasing Focus on Ceramic Microspheres

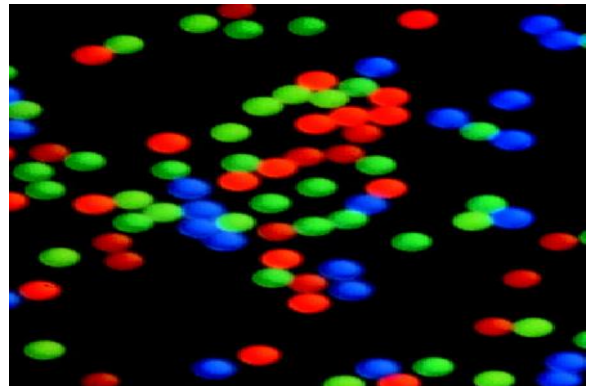
Ceramic microspheres are microscopic particles intended for use as additives and fillers in paints and coatings, and in construction materials. Ceramic microspheres are used in paints and coatings on account of the advantages of their higher viscosity, reduced costs, shrinkage level, drying time, and volatile organic compound (VOC) emissions. Ceramic microspheres are silica-alumina-iron oxide-based inert spherical-shaped microspheres. High alumina microspheres have

been developed for high-temperature applications such as refractories, foundries, high-temperature coatings, and flame retardants. Ceramic microspheres are also used for high-stress environments and energy absorption in the automotive part sector, PVC flooring, polymer concrete, and anti-blocking formulations.



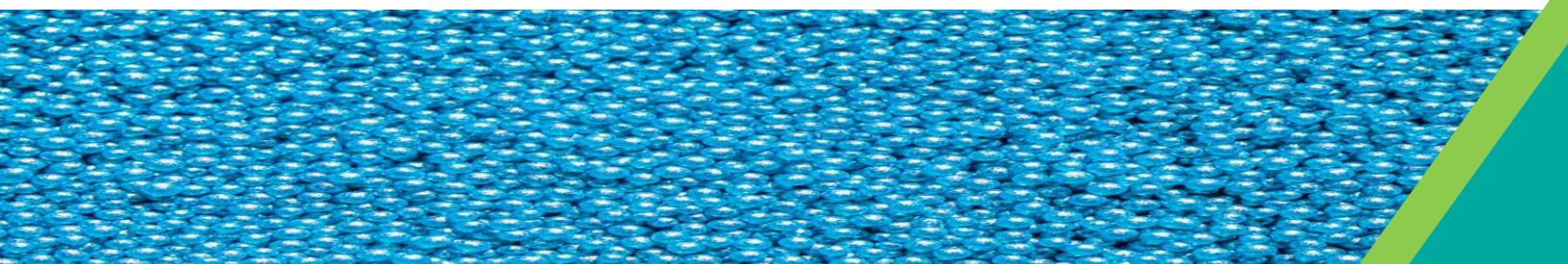
4. Fluorescent Microspheres

Fluorescent microspheres have a unique ability to appear translucent and practically invisible under ordinary light, and to emit intense, visible color when energized by ultraviolet (UV) light. This effect allows scientists and engineers to design blind tests and controlled experiments (e.g., simulate the spread of viruses) in which the microspheres remain invisible to the operator during the procedure, therewith eliminating any operator bias and uncertainty in the validity of the experiment. This unique feature of fluorescent microspheres has numerous applications in biomedical research and process troubleshooting. For example, fluorescent microbeads are often used as traces to simulate the spread of viruses in medical research.

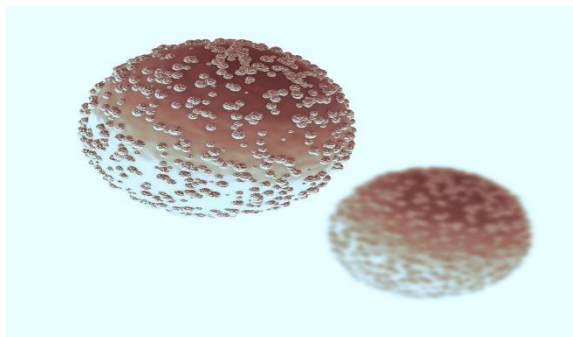


5. Growing Demand for Microspheres in Controlled Drug Delivery Systems

There has been an increase in the development of drug delivery systems, which is influencing current medical practices. Microspheres play a vital role in minimizing side effects, and also



improving bioavailability of conventional drugs. There are two types of microspheres commonly used in medications: microcapsules and micrometrics. Microspheres are used to control drug release rates in order to decrease toxic side effects and eliminate the inconvenience of repeated injections. Microspheres are used in controlled drug delivery systems because they offer various advantages as mentioned below:

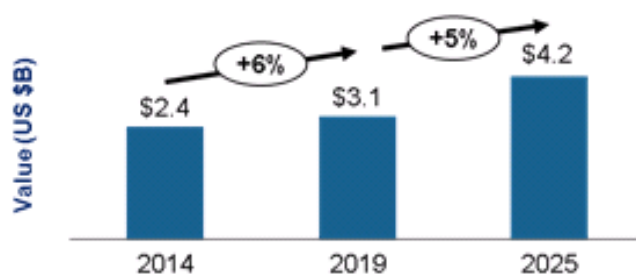


- Ability to control release rate for predefined period of time
- They provide constant drug concentration in the blood, increasing patient compliance.
- Reduce the reactivity of the core in relation to outside environment
- Convert liquid to solid form and mask a bitter taste
- Reduce the incidence or intensity of adverse effects

Strategic Considerations for Key Players in the Microsphere Market

The microsphere industry is dynamic and ever-changing. Successful industry players are necessarily masters of innovation, change, and adaptation. To retain this status, they need to be attentive to current trends. We believe there will be promising opportunities for microspheres in the composites, medical technology, life science and biotechnology, and painting and coating industries. As per Lucintel's latest market research report (Source: <https://www.lucintel.com/microsphere-market.aspx>), the [microsphere market](https://www.lucintel.com/microsphere-market.aspx) is expected to grow with a CAGR of approx. 5.0% between 2020 and 2025, and reach \$4.2 billion by 2025. This market is primarily driven by the growing demand for higher efficiency and lightweight materials, and the superior structural and enhanced properties of microspheres over those of conventional fillers.

Trends and Forecast for the Global Microsphere Market (US \$B) (2014 - 2025)



Source: Lucintel

Whether you are new to the microsphere market or an experienced player, it is important to understand the trends that impact the development process, as these trends as listed above will lead players to create long-term strategy formulation that will allow them to remain competitive and successful in the long run. For example, to capture growth, some of the strategic considerations for players in the microsphere market are as follows:

- Microsphere market players can increase their capabilities to develop biodegradable microspheres.
- Players can focus on ceramic and polymer microspheres to increase the ease of processing, which is expected to lead future trends.
- Investment to increase competencies in the development of microspheres for controlled drug delivery systems
- Research and development activities for the development of low-cost microspheres

Note: In order to gain better understanding, and learn more about the scope, benefits, and companies researched, as well as other details in the microsphere market report from Lucintel, click on <https://www.lucintel.com/microsphere-market.aspx>. This comprehensive report provides you in-depth analysis on market trends and forecast, segment analysis, regional analysis, competitive benchmarking and company profiling of key players. In addition, we also offer **strategic growth consulting** to meet your customized needs. We have worked with many PE firms and corporate customers in the process of their market entry and M & A initiatives.

Lucintel - At a Glance

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